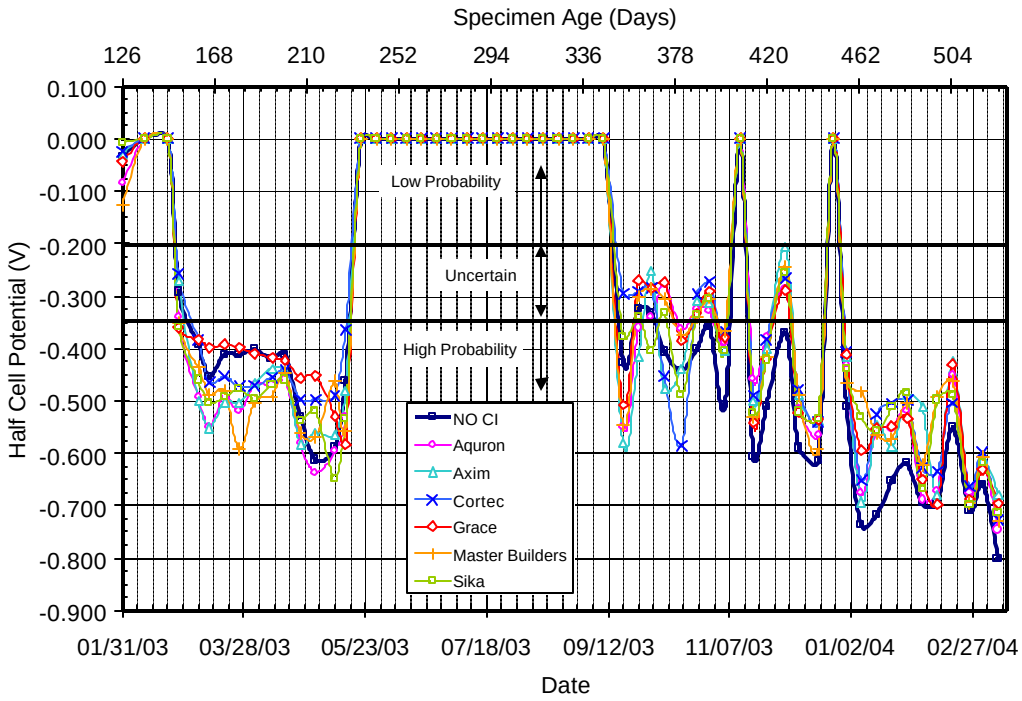

Figure 4.9 - Half Cell Readings for Chamber Shelf 3, 2.0% Chloride, Post-Cracked

As expected, no corrosion was measured for the control environment specimens by the half cell method.

Based on the above stated limits, the bath specimens began to exhibit a high probability of corrosion after approximately one month of accelerated testing. The bath specimens for the most part stay within this region for the remainder of the accelerated test program except to fluctuate into the uncertain range on occasion and very rarely into the range of low probability of corrosion. The cyclic fluctuations that are exhibited by the half cell graphs for the bath specimens were observed to occur due to the one-week wet and one week dry cycles. Much higher potentials were generally observed directly after the wet cycles. Conversely, lower potentials were observed following a week in the dry cycle for the same specimen. This phenomenon occurred even with proper wetting of the concrete surface prior to taking measurements after each cycle. This may be attributed to the fact that the electrical current being measured could travel through the saturated concrete with more ease than it could through the dry concrete, despite a fully wetted surface.

The chamber specimens display many of the same trends as those in the baths. Similar to the specimens in the baths, there was a high probability of corrosion observed after just about one month of accelerated environmental exposure for most specimens. Most specimens fluctuated in and out of the high probability and uncertain regions, and occasionally into the low probability range. There were more occurrences of chamber